

## PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Title: BINDER OF VEGETABLE NATURE FOR THE PRODUCTION OF MATERIALS FOR BUILDING AND/OR CIVIL ENGINEERING

Appl. No.: 10/820,004

Applicant: BAILLIE Michel

Filed: Apr. 8, 2004

TC/A.U.: 1793

Examiner: Brunsman, David M

Docket No.: 0510-1093

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## CERTIFICATE OF MAILING

37 C.F.R 1.8

I hereby certify that this correspondence is being deposited with the U.S. postal service with sufficient postage as First class Mail in an envelope addressed to: commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below:

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Signature

## DECLARATION OF JEAN-ERIC POIRIER UNDER 37 C.F.R. §1.132

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-01 450

I, Jean-Eric Poirier declare:

I am a French citizen residing at 2 allée de l'Hermine 78180 Montigny le Bretonneux. I am currently employed as Scientific Director at Colas.

I was graduated in applied geological engineering in 1974 at Nancy followed by a PhD of physical chemistry, awarded by the National Polytechnical Institute of Lorraine in 1979. From 1982 to 1990, I worked as researcher at CNRS (National Scientific Research Center). I participated in several research projects concerning improved petroleum recovery, water treatment, ore beneficiation and the use of minerals as fillers in polymers. All these research works are dealing with the field of colloid physical chemistry. I joined Colas in 1990 to direct the

research into modified asphalts and bitumen emulsions. Since 1992, I am director of the Central Research Laboratory at Colas.

I am familiar with United States patent application 10/820,004 filed on April 8, 2004, being one of the named inventors. I have reviewed the pending claims 18-42 for this application.

I understand that the Examiner in charge of assessing the patentability of the above-referenced application considers that pending claims 18-25, 28, 29, 31-38 are not new over document US 2749247. I have reviewed the Final Office Action dated October 12, 2007 and document US 2749247 (hereinafter Reference A).

This declaration aims to show that the varnish compositions described in reference A do not anticipate the invention and are not suitable to be used as a binder for road applications as claimed in the invention.

### I. Background

The Examiner considers that reference A discloses the invention as claimed in US Patent Application number 10/820,004 and in particular that example IV of Reference A teaches a composition comprising rosin ester (component a), linseed oil and tung oil (component b) with cobalt linoleate added as drier (catalyst). According to the Examiner, the varnish composition contains a ratio of a to b of 33:67. This composition also contains 300 cc of benzene. This varnish is then sprayed on a glass plate. The examiner considers that the dried coating would be essentially free of organic solvent as it is driven off during drying. Therefore, the Examiner considers that it is the dried composition which would be expected to have properties similar to those of the binder of the invention.

### II. Experiment

#### II.1. General conditions

I have initiated and supervised reproduction of example 4 of Reference A. The composition so obtained was then characterized. The values characterizing the compositions of Reference A are then compared with those claimed for the compositions of the invention. Experiments were realized in "laboratoire Liants", Campus for Science and Technique between January 28 and 30th, 2008.

#### II. 2. Materials and methods

##### Materials:

- Boiled linseed oil: Venox R231001 commercialized by Vandeputte Oleochemicals, named H1
- Glycerol ester of polymerized rosin (Dertopoline G2L) commercialized by DRT, named R1
- Tung oil (commercialized by Vandeputte Oleochemicals), named H2
- Cobalt carboxylate (Octa-Soligen Cobalt 12 – Borchers) named CC1
- Toluene

Remark: For safety and health reasons, Colas prohibits the use of benzene or cobalt linoleate such as described in Reference A. Therefore, these products have been replaced respectively by toluene and cobalt carboxylate (Octa-Soligen Cobalt 12 commercialized by Borchers). To my knowledge, these two products are well known equivalents to benzene and cobalt linoleate.

Characterization methods:

- Penetrability was measured according to the standard NF EN 1426.
- Softening point was measured according to the standard NF EN 1427.
- Viscosity at 60°C was measured according to the standard NF EN 13302 with a Brookfield viscometer (50 RPM).

According to the invention, the viscosity is measured according to the standard NF EN 12596 at 60°C. Since the method according to standard NF EN 12596 is not available in the laboratory, I measured the viscosity according to the standard NF EN 13 302. These two methods measure the dynamic viscosity. I declare that, for the invention binders, the viscosities measured with both methods at 60°C are equivalent.

**II. 3. Method for preparing the composition**

75 grams of H1 was heated at 270°C with constant stirring.

50 grams of R1 were mixed with H1 under stirring and cooked at 240°C during 6 hours.

***No formation of thread was ever observed during the cooking contrary to the teaching of Reference A.***

The temperature was then brought down to 200°C and 25 grams of H2 (tung oil) was added under stirring. The mixture was maintained at 200°C under stirring during 1 hour.

***The mix does not give a thread at the end of this step.***

The final composition is obtained by adding 287.5 grams of toluene and 12.5 grams of cobalt carboxylate.

#### II.4. Characterization of the final composition

Requirement c1: The penetrability of the final composition at 25°C is higher than 50 mm and the softening point is lower than 28°C. The penetrability and the softening point are not within the range claimed in requirement (e.1) of the invention.

Requirement (c2): The viscosity of the final composition is 3.5 mPa.s at 60°C (speed 50 RPM – SC4-21). The viscosity of the final composition is not within the range claimed in requirement (e.2) of the invention.

**Conclusion:** None of the two requirements (e) of claim 18 is fulfilled. The composition of varnish according to example 4 is not suitable to be used as a binder.

#### II.5. Application of the varnish on a support and recovery

The varnish composition was sprayed on a glass plate.

I observe that the varnish is dry and hard when the solvent is evaporated. The recovery of the varnish without solvent is very difficult. Moreover, the dry varnish recovered lost its ability to bind materials. The dry varnish cannot be recovered after drying and used as binder without being redissolved in a solvent.

### III. Conclusion

I reproduced Example 4 of Reference A by using the same manufacturing method and raw materials.

I never have obtained a thread such as disclosed in reference A.

The varnish composition according to example 4 presents characteristics of penetrability, softening point and viscosity which do not fall within the claimed ranges of the binder according to the invention.

The varnish once applied and dried is not reusable as binder without using a solvent.

I declare that all statements made in this declaration of my knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of title 18 of the United States

Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date

Tuesday, 11 March 2008

Signature



Jean-Eric POIRIER